

OCCUPATIONAL CONTACT DERMATITIS IN A TERTIARY CARE CENTRE – EPIDEMIOLOGY, CLINICAL PROFILE AND PATCH TEST EVALUATION

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OBJECTIVE :

The study is undertaken to determine the epidemiology and clinical pattern of occupational contact dermatitis and to find the causative allergens by patch testing using Indian Standard Series in patients visiting a tertiary care centre.

INTRODUCTION:

Skin disease arising from occupational exposure is common and second only to musculoskeletal disorders as a cause of industrial ill health. Prevalence studies reveal dermatitis (mostly atopic eczema) in about 20% of the general population at any one time. Hand dermatitis is present in about 2% of the people at any one time with a lifetime risk of 20% in women. Irritant dermatitis is more common than the allergic type but the latter carries a worse prognosis unless the offending allergen is identified and eliminated.

INDICATIONS

- Eczematous disorders where contact allergy is suspected or is to be excluded
- Eczematous disorders failing to respond to treatment as expected
- Chronic hand and foot eczema
- Persistent or intermittent eczema of the face, eyelids, ears and perineum
- varicose eczema

TEST MATERIALS :

- 1.finn chambers
- 2.allergens (Indian standard series)-20 allergens
3. non-adhesive , non-allergic . non-irritant tape

LIST OF CODFI ANTIGENS (INDIAN STANDARD BATTERY)

COMPOUND	CONC%	Veh
control	100	Pet
Potassium dichromate	0.5	Pet
Neomycin sulphate	20	Pet
Cobalt chloride	1.0	Pet
benzocaine	5.0	Pet
4-phenylenediaminebase (PPD)	1.0	Pet
parabens	15	
Nickel sulphate	5	
colophony	20	Pet
Epoxy resin	1.0	Pet
Fragrance mix	8	Pet
mercaptobenzothiazole	2.0	Pet

nitrofurazone	1.0	Pet
chlorocresol	1.0	Pet
Wood alcohols	30	Pet
Balsum of peru	25	Pet
Thiuram mix	1.0	Pet
Black rubber mix	0.6	
formaldehyde	1.1	Acq
parthenium	1.0	

READING & INTERPRETATION :

The ideal system - record the results at 2 & 4 days.

RECORDING OF PATCH-TEST REACTIONS : International Contact Dermatitis Research Group

(-) Negative

(?+) Doubtful - faint erythema only

(+) Weak positive- palpable erythema, infiltration, possibly papules

(++) Strong positive- erythema, infiltration, papules, vesicles

(+++) Extreme reaction -intense erythema and infiltration coalescing vesicle

Irritant reaction

(IR)-Irritant reaction of different types

COMPLICATIONS:

- pruritis
- folliculitis

- generalized flare of dermatitis
- Localised Flare of dermatitis
- Scarring
- Active sensitisation
- Post inflammatory hypo pigmentation & hyper pigmentation
- Anaphylaxis (very rare)

METHOD AND MATERIAL

STUDY DESCRIPTION

STUDY DESIGN – Observational convenient sampling study

PLACE OF STUDY - Department of Dermatology, Government Stanley Medical College, Chennai-1

DURATION OF STUDY – One year between August 2016-July 2017

SAMPLE SIZE – 221 patients

INCLUSION CRITERIA

- 1.Eczematous Contact dermatitis where occupational contact is present / suspected
- 2.Age between 18 years – 70 years
- 3.Patients willing for follow up

EXCLUSION CRITERIA

1. HIV / immunocompromised individuals
2. Pregnancy
3. Children and age > 70 years

ADVANTAGES:

Safe

Simple

Little expertise

PROCEDURE :

221 Adult patients visiting our OPD within the study period of 6 months employed in various occupation-construction , metal work , leather work, painting , agriculture , hair dressers , household workers, healthcare work with suspected contact dermatitis after getting consent were enrolled. Demographic variables, clinical history, and examination were carried out. To find the etiologic agent for a particular type of eczema, attention was paid to the presenting complaints, past history of allergy, occupational history, and seasonal aggravation. History, regarding habits, hobbies, correlation with the usage of particular items such as medicaments, cosmetics soap, jewelry, etc., was asked. Associated dermatological or systemic disease if any was noted.

Patch tests were applied to the upper back using aluminium patch test chambers mounted on a hypoallergenic micropore tape .They were removed on day 2 ,

reading were taken on day 2 and day 4 . Grading of the reaction was based on ICDRG guidelines .

RESULTS

The most common occupation in our study population was Construction industry (68 patients – 30.77%) , followed by painting (40 patients – 18.10%) ,farming(9.50%) , housewives (9.50%). Hand eczema (61.54%) was the most common clinical pattern followed by hand and foot eczema (14.03%). The total number of patches applied were 4420 out of which 895 yielded positive results (20.25%). Contact sensitization was most commonly caused by Potassium dichromate (9.50%) followed by Paraphenylene diamine (8.60%), Nickel sulphate (8.60%), Cobalt chloride was found to be positive in 8.04% and Epoxy resin in 7.60%. The least common sensitising allergens were Neomycin (1.45%), Paraben (1.45%), Nitrofurazone (1.18%), Benzocaine (1.23 %).

CONCLUSION:

Our study reiterated the fact that patch test is indeed the gold standard for diagnosing Allergic contact dermatitis, Patch test evaluation for identified positivity to occupationally relevant and occupationally nonrelevant allergens, whose identification is the base for further management and established emphasis on the need for sufficient primary preventive measures.

Keywords – Patch testing , Occupational , contact dermatitis